Test Creation and Strategies for Online Classrooms

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9:00-9:50am

Fall FLEX Day

October 20, 2020

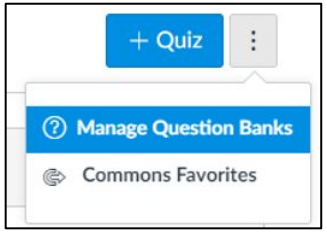
Testing

What are you doing to test your students?

Let’s discuss! Jamboard

Test Creation

Canvas Test Banks



Pros

- Create objective test banks with multiple questions of similar difficulty to pull from.
- Create test banks that represent different versions of tests to randomize the order the questions appear if you would like your questions to be static.
- Blend the two types together since you can add the test banks to your quiz in any order.

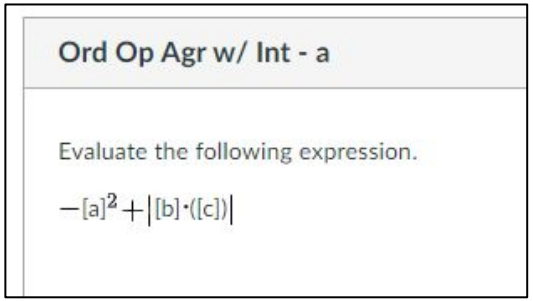
Cons

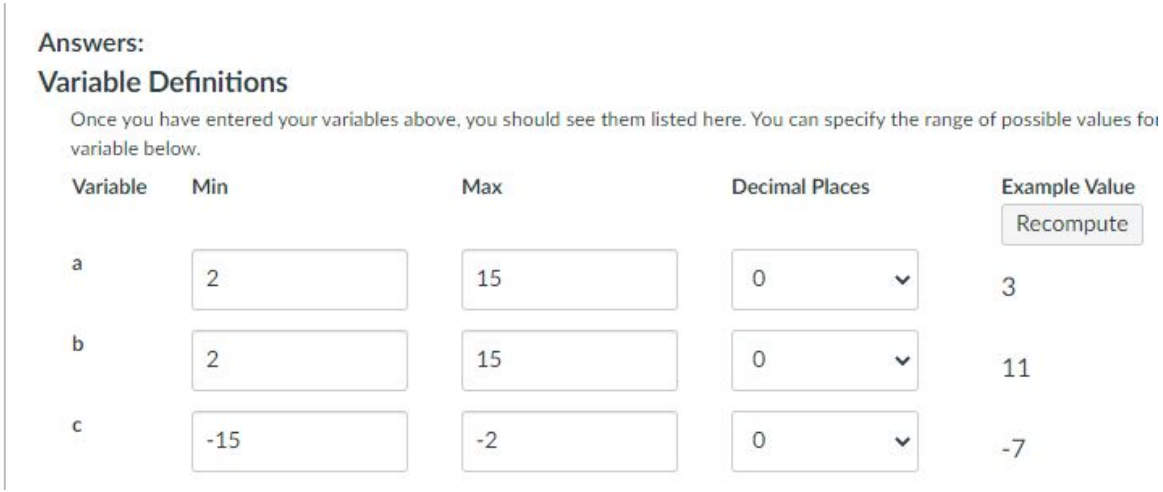
- If you create multiple versions, then you will have a different grade book entry for each version.
- Copying a test from one course to the next does not maintain the bank link.
- Each question must be of one question type, so some creative solutions are necessary.

Test questions can be written such that:

They can be formulaic

- Allows for randomization of values.
- Create multiple version with different value range.





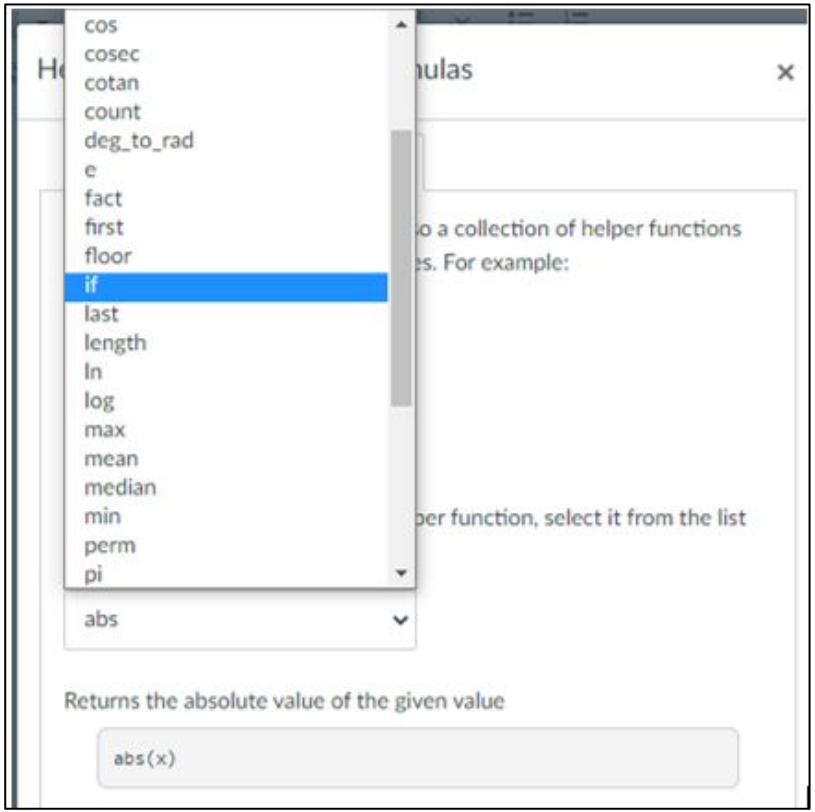
Shortcomings:

- Only accepts one numerical answer.
- Can't use randomized inputs to create a randomized output in the question.
- Can't force "pretty" questions.

Test questions can be written such that:

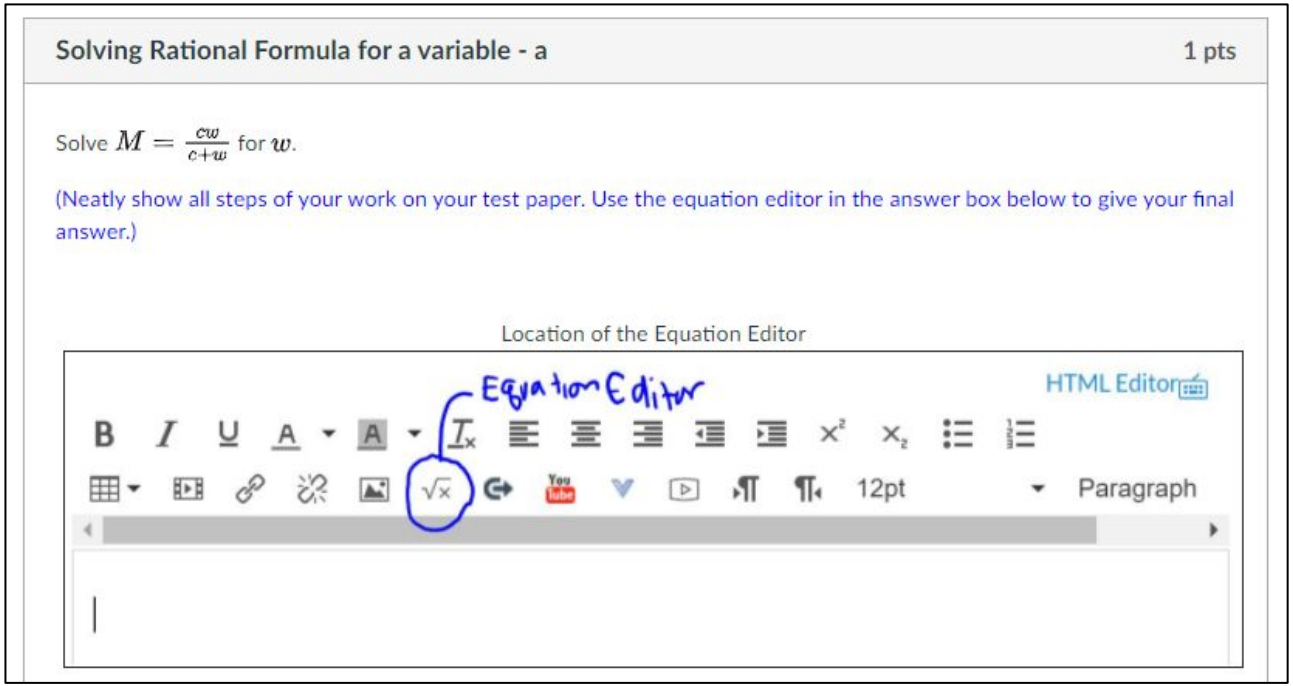
They can be formulaic

- Has a “Need help?” menu built into the question that has a list of useful functions for all levels of math.



Test questions can be written such that:

Essay questions allow for use of the equation editor



- Great for question types where there is a non-numerical answer.
- Great for questions where the “text entry” option doesn’t allow for complexity of the answer.
- Great for questions where you want them to explain their steps and math is involved.

Shortcoming:

- Remains ungraded until your review it.

Test questions can be written such that:

Essay questions also allow for committing to an answer.

Given the equation.

$y = \frac{1}{4}x - 3$

a: Create the following table on your test paper.

Table of Values

x	y
-4	
0	
4	
8	

Determine the corresponding y-value for each x-value given in the table. (In the text box below, type the resulting four ordered pairs with coordinates written as integers or simplified fractions.)

b: On your test papers, neatly draw and label a set of axes, then graph the equation. (In the text box below, describe your resulting graph as vertical, horizontal, climbing left-to-right, or falling left-to-right.)

Test questions can be written such that:

Students input answer, but also show work or points are revoked.

Assume that men's heights are normally distributed with a mean of 68.6in and a standard deviation given by 3.6 in. If 32 men are randomly selected, find the probability their sample average height will be greater than 66.4 in.

*(**On your Scratch Paper,** neatly show your work for finding the requested information. This includes:*

- *defining your random variable,*
- *using appropriate probability notation that include the equality/inequality and your random variable,*
- *showing how you came to your conclusion by linking your probability notation to how you find it*
- *and stating your answer as a complete sentence.*
- *Round your final answer to four decimal places.)*

Use the given frequency distribution table to create a Histogram and answer the questions below.

*(**On your Scratch Paper**, neatly sketch the histogram. Make sure the axes are clearly labeled with their values and what the numbers represent.)*

Class Limits	Frequency
6.4 - 8.3	12
8.4 - 10.3	13
10.4 - 12.3	11
12.4 - 14.3	12
14.4 - 16.3	13

a. What values are used on the horizontal axis? [horiz]

b. What values are used on the vertical axis? [vert]

c. Based on the histogram, how is the data distributed? [dist]

d. Why did you select that distribution type? [why]

Test questions can be written such that:

They can create a place to distribute **paper test** and accept a file upload of the work.

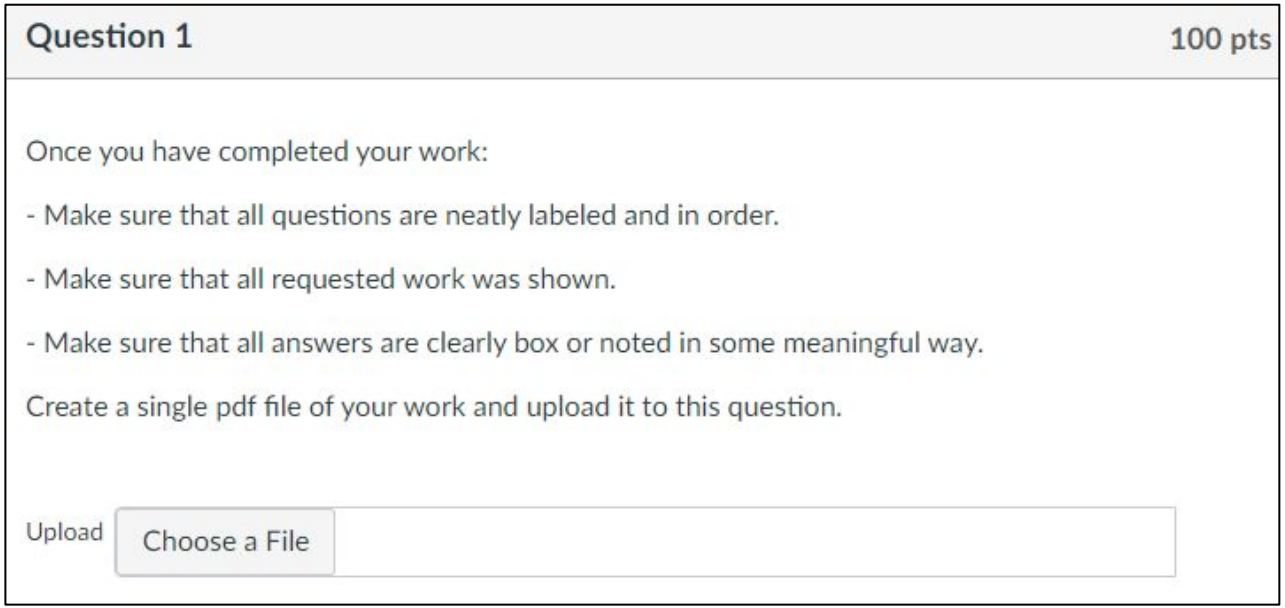
Please download and print your test. If you do not have access to a printer then you may neatly write up your work on your own paper.

Test 1

- Could create a bank that has different version of the paper test, so which students get is randomized.

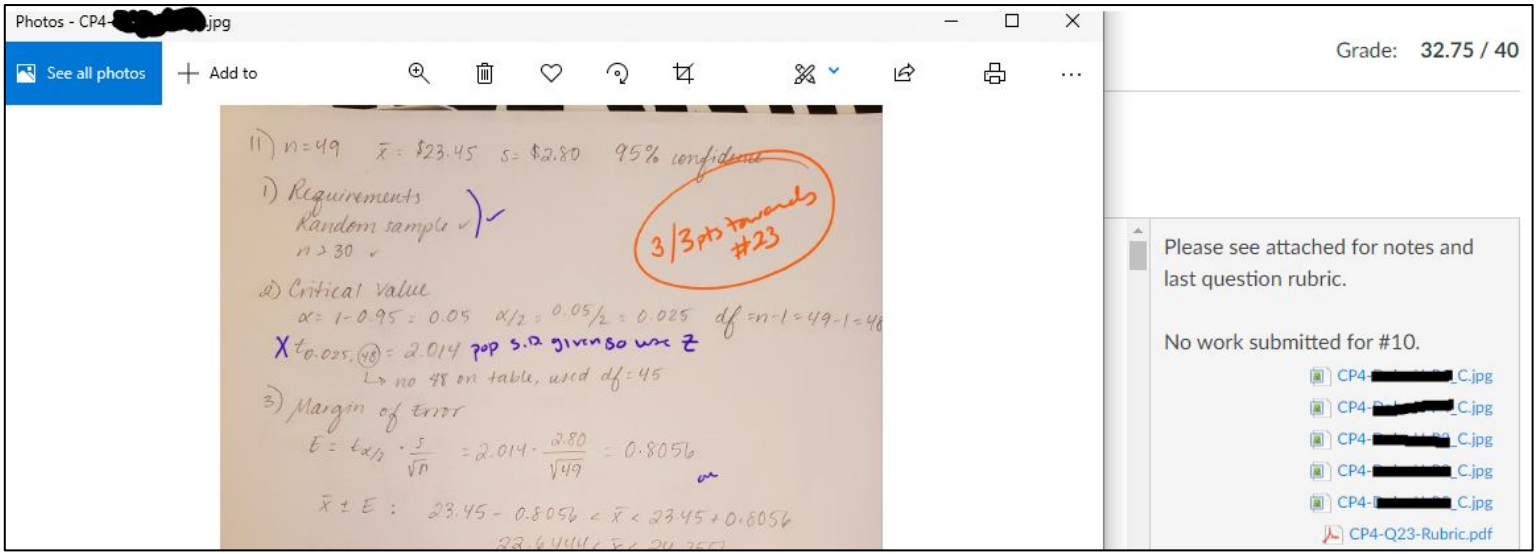
Shortcomings:

- Not a uniform distribution of tests.
- Grading pdf is clunky.



Grading Tests (assuming you asked for work!):

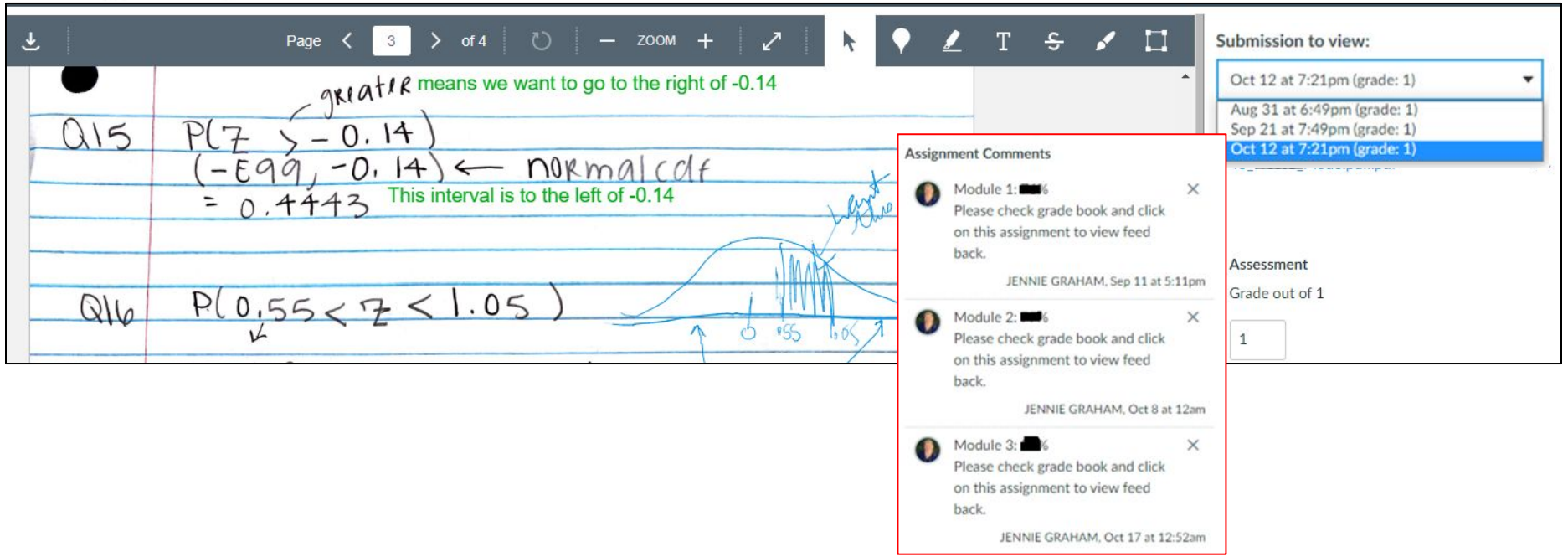
- If work was uploaded to a quiz question, then you can download pdfs or pictures and grade them on your prefered computer software. Then upload the annotated pdfs or picture to the comments of the test for each student.



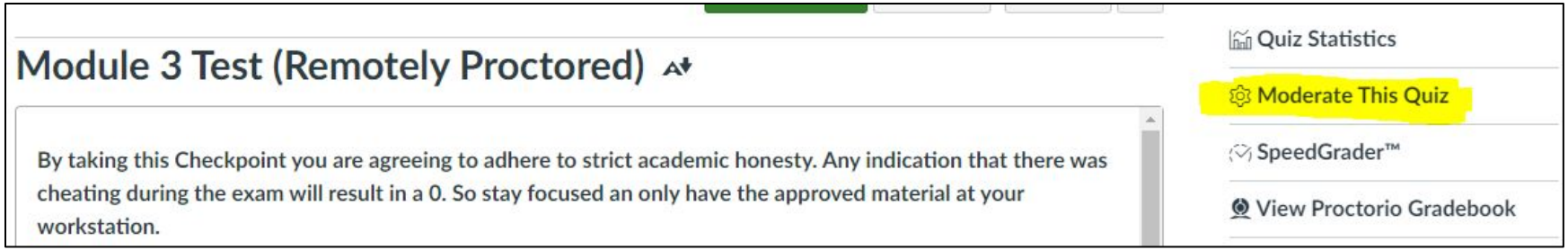
Grading Tests (assuming you asked for work!):

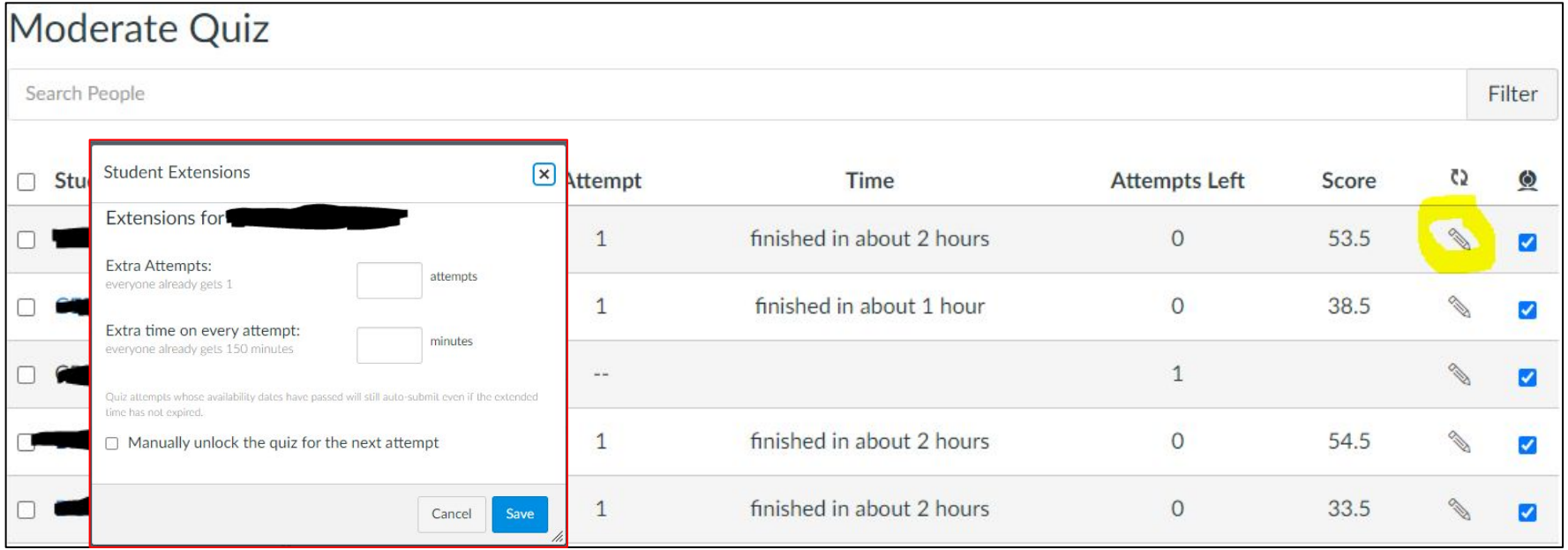
- Create an assignment for students to upload work to and use the Canvas annotation and feedback tool.

After submitting the checkpoint, create a scanned pdf of your work and upload it to the Module Work Upload Assignment. Remember to use the naming convention of: 40_Last name First initial_Mod 3. So for example, mine would be 40_GrahamJ_Mod 3



Moderating the Exam





Preventing Cheating

Preventing Cheating

How do YOU prevent cheating in your classes?

Let’s discuss! Jamboard

Proctoring - Specifically with Proctorio

PROS

- Has flexible settings for proctoring.
  - Lenient as just capturing the student's computer screen to as strict as mic on, video on, screen sharing enabled, room scan and id check.
- Offers peace of mind to most instructors.
- More classic questions can be asked since it is much harder for students to research answers while testing.

CONS

- Not all students have the technology available for maximum strictness.
  - Make sure syllabus reflects that you will be using it and link students to the Proctorio FAQ site.
- Not all students are comfortable having their space on camera. The FAQ usually puts student's minds at ease, but not always.
- It's not foolproof. If a student is determined to cheat, then they will find a way.

Not Proctoring

PROS

- No technology needed for proctoring service.
- Reduced stress for the student, less invasive to their personal space.
- The need for more creative questions can reveal more insight into their understanding

CONS

- Greater potential for cheating
- Scores are not as meaningful
- Questions may need to be more creative (less “traditional”)

To Proctor or not to Proctor

Regardless of decision, here are a few things to consider doing:

- Include an academic honesty statement in your syllabus that is explicit in what you consider to be cheating.
  - Repeat this statement often: Quiz/Test review pages, Quiz/Test instructions page, etc.
  - Could have students sign a contract at the beginning of the semester or for each quiz (could create a question on the quiz where they have to “check yes” to the statement.
- Use original questions, when possible.
  - It’s harder for students to just Google questions or use Photomath on something if it isn’t already in mainstream use.
- Give a time limit that is long enough to work, but not long enough to research and learn the material as they test, especially if you’ve made the test open-book.
- Display questions one at a time - Lock questions after answering.

To Proctor or not to Proctor

Regardless of decision, here are a few things to consider doing:

- Use open-ended questions that test for understanding of concept:
  - What was the mistake in solving this question?
    - Student checks their answer with instructor's solution of and they are different. What went wrong?
  - Explain, in your own words, how to solve this equation, simplify this expression, test this hypothesis…
  - Interpret this result in the context of this question.
  - Define your variables and set up the equations necessary for solving this application, but do not solve.
- Reduce the percentage that exams are worth in the course
  - Could do a course project that is weighted more than assessments
  - Could make discussion boards where student work together weighted more than assessment.

If Cheating is discovered...

How do YOU handle cheating in your classes?

Let’s discuss! Jamboard

If Cheating is Discovered...

NOTE: Some students haven't learned what is "okay" in academia, so be clear about what you consider to be cheating from the start of the course.

- Possible solution: Give them a chance to confess
  - Allow for redemption over punishment as many are struggling with a lot.
  - Require attendance to an Academic Honesty Smartshop.
- Possible solution: Have students meet with you following an exam to explain their work. Dock points if they can't do it. Cheating will typically subside.
  - It is helpful to have a statement along these lines in your syllabus.

THANK YOU FOR COMING! Don’t forget the survey!